## REMARKS

Claims 1-49 are pending in the application. In the April 21, 2003 Office action, the Examiner issued a Restriction Requirement and Election of Species Requirement; rejected claim 6 under 35 U.S.C. § 112, second paragraph; rejected claims 1-4, 18-20, and 49 under 35 U.S.C. § 102(b) as anticipated by Baumstark et al. (U.S. 5,744,540); rejected claims 5 and 6 under 35 U.S.C. § 103(a) as being unpatentable over Baumstark et al. in view of Brown et al. (U.S. 4,629,663); and rejected claims 7-17 under 35 U.S.C. § 103(a) as being unpatentable over Shih et al. (WO 99/04981) in view of Baumstark et al.

Applicants affirm the election of claims 1-20 and 49 made by the undersigned during an April 3, 2003 telephone conversation with the Examiner. Applicants hereby cancel claims 21-48, but expressly reserve the right to pursue the non-elected claims in one or more divisional or continuation applications to be filed in the future.

Applicants also affirm the election of species: butyl acrylate as the soft monomer, methyl methacrylate as the hard monomer, and poly(diallyldimethylammonium chloride) as the mordant. Claims 1-20 and 49 read on the elected species butyl acrylate and methyl methacrylate; and claims 7-10, 14-16, and 18-20, read on the elected species poly(diallydimethyl ammonium chloride). Applicants expressly reserve the right to pursue all non-elected species.

Applicants respectfully traverse the rejections under 35 U.S.C. §§ 112, 102(b) and 103(a).

Applicants have amended claim 6 to correct the error in the naming of the reactive surfactant. In addition, Applicants have amended the specification to make the same correction. The amendments do not introduce new matter. A person having ordinary skill in the art would realize that the surfactant abbreviated by Applicants as "SVS" is, in fact, "sodium vinyl sulfonate," not "styrene vinyl sulfonate".

Enclosed with this amendment are two documents downloaded from the internet. The first is from the Springer-Verlag Heidelberg website, "SpringerLink," with an abstract for the book, "Progress in Colloid and Polymer Science." Note that it refers to "the comonomer sodium vinyl sulfonate (SVS) . . ." The second document is from ChemBuyersGuide.com, showing two pages for Kowa American Corporation, a subsidiary of the Japanese chemical company, Kowa Company. Among the products listed on page 2 are "sodium allyl sulfonate," "sodium methallyl sulfonate," sodium styrene sulfonate," and "sodium vinyl sulfonate." Notably absent is "styrene vinyl sulfonate". The undersigned posits that a reactive surfactant known as "styrene vinyl sulfonate" does not exist, and that a person skilled in the art would recognize that the surfactant known by the abbreviation "SVS" is, in fact, sodium vinyl sulfonate.

Claims 1-4, 18-20, and 49 stand rejected under 35 U.S.C. § 102(b) as anticipated by Baumstark et al. Applicants respectfully traverse the rejection. The Baumstark et al. reference does not anticipate Applicants' claims, as it does not "clearly and unequivocally disclose the claimed compound or

direct those skilled in the art to the compound..." *In re Arkley*, 455 F.2d 586, 587 (C.C.P.A. 1972).

Baumstark et al. describe an aqueous polymer emulsion prepared by polymerizing a first group of monomers (composition 1) to a conversion of at least 90% by weight, followed by polymerizing a second group of monomers (composition 2) in the presence of the product mixture of polymerization stage one. In addition, at least one adhesion-promoting monomer is polymerized with compositions 1 and/or 2, preferably with 20 to 100 mol% of the polymerization taking place in polymerization stage one.

The Baumstark et al. abstract (cited by the Examiner) merely refers to an aqueous polymer emulsion obtained by polymerizing two monomer compositions -- one comprised essentially of soft monomers, and the other comprised of hard monomers -- and, in addition, one or more nitrogen-containing adhesion-promoting monomers. A broad genus of monomers from which monomer compositions 1 and 2 may be selected is recited at column 4, line 60, through column 6, line 43. The reference specifically identifies styrene, vinyl esters, esters of unsaturated mono- and dicarboxylic acids, nitriles, conjugated $C_4$-$C_8$-dienes, VEOVA® esters, and similar compounds and derivatives.

The Examiner cites column 5, lines 22-26, and says that "the main part of the monomer composition comprising hard and soft monomers accounts for more than 50% by weight, based on the monomer composition." (Emphasis omitted.) In fact, the cited passage simply says that "the main part of the monomer compositions 1 and 2 is generally chosen from the above-

mentioned monomers and altogether accounts for more than 50% by weight... (Emphasis added.) In other words, the cited passage says that the main portion of monomer compositions 1 and 2 is selected from those monomers recited at the bottom of column of 4 carrying over to column 5, namely, styrene, esters of unsaturated mono- and dicarboxylic acids, nitriles, conjugated dienes, and VEOVA® esters. The disclosure of such a broad genus is insufficient in and of itself to constitute a clear and unequivocal disclosure of the first two limitations recited in applicants' claim 1, namely, 5-90% soft acrylic monomer(s) and 90-5% hard acrylic monomers.

The Examiner also states in the Office action that the Baumstark et al. "monomers may be selected exclusively from the following monomers: n-butyl acrylate, 2-ethylhexyl acrylate, ethyl acrylate, methyl methacrylate, n-butyl methacrylate, styrene, acrylic acid, methacrylic acid, hydroxyl propylacrylate, etc. (column 6, lines 55-64)." (Emphasis omitted.) At a minimum, Baumstark et al.'s disclosure of a preferred sub-genera of monomers from which monomer compositions 1 and 2 are chosen is insufficient to anticipate Applicants' claim to an acrylic copolymer in which the elected species butyl acrylate and methyl methacrylate are included. That is, the identification of a list of nine preferred monomers from which compositions 1 and 2 are selected cannot constitute an anticipation of Applicants' more narrow selection of butyl acrylate and methyl methacrylate. There is nothing to direct the skilled person to select butyl acrylate over, e.g., ethyl acrylate or ethylhexyl acrylate.

Applicants submit that the Baumstark et al. reference does not clearly and unequivocally disclose the unique combination of monomers, in the unique weight percentages, recited in Applicants' claim 1. The reference merely teaches a broad genus and sub-genus of monomers, without steering the skilled person to select, specifically, the combination of monomers recited in claim 1.

Independent claim 49 is also not anticipated by Baumstark et al. The claim calls for even more particular weight percentages of, e.g., butyl acrylate, methyl methylacrylate, hydroxypropyl acrylate, etc. Notably, the claim calls for 0.1-0.5% by weight of triethylene glycol diacrylate. Although Baumstark et al. does identify the possibility of including a minor amount of, e.g., an alkylene glycol diacrylate or dimethacrylate, it does not mention triethylene glycol diacrylate. Nor does Baumstark et al. teach the specific combination of butyl acrylate, methyl methacrylate, hydroxyl propylacrylate, triethylene glycol diacrylate, methacrylic acid, and the recited ureido monomer. Rather, the reference merely provides a broad genus and sub-genus of monomers. It would require an improper use of hindsight, gleamed from reading Applicants' disclosure, to select, from the vast number of possibilities described by Baumstark et al., the precise combination of monomers recited in claim 49. In addition, there is no teaching of the specific weight percentages of each of the recited monomers, in combination. There is no way to extrapolate the unique combination of Applicants' claimed weight percentages from the cited reference.

Applicants' dependent claims are also allowable over the Baumstark et al reference. For example, dependent claim 4 states that the plurality of monomer consist essentially of the specified monomers, including tetraethylene glycol diacrylate. That particular multi-functional monomer is not taught by Baumstark, et al.

Claims 5 and 6 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Baumstark et al. in view of Brown et al. The primary reference, however, is insufficient to support a rejection of claims 5 and 6, for the reasons presented above. The secondary reference (Brown et al.) is cited because of its disclosure of sodium styrene sulfonate; however, claim 6 now recites that the reactive surfactant is sodium vinyl sulfonate. Hence, rejection of claim 6 based on the combination of Baumstark et al. and Brown et al. is moot.

Claims 7-17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Shih et al.(WO 99/04981) in view of Baumstark et al. The Examiner acknowledges that Shih et al. does not anticipate the present invention, but attempts to bridge the gap by citing the Baumstark et al. reference. The Examiner has not, however, presented a prima facie case of obviousness in view of the two references. Specifically, the Examiner has not made an adequate showing of a motivation to combine the teachings of the respective references.

The Baumstark et al. composition is typically used as a protective coating, e.g., as a protective glaze for wood. (See, e.g., column 13, lines 42-67.) The reference contains a general statement that the Baumstark et al. invention "relates to

processes for the preparation of novel aqueous polymer emulsions and their use for coating, adhesive bonding, sealing and impregnating, their use as binders for coating materials and, in particular, glazes being preferred." (Col.1, lines 38-42.) Such a general statement cannot serve as the basis for combining Baumstark et al. with Shih et al. The Shih et al. reference is clearly directed to ink-receptive compositions; the Baumstark et al. reference plainly is not. There is no basis, therefore, for concluding that a person of ordinary skill in the art would find the invention to be obvious in view of the two references, there being no motivation to combine their respective teachings. Moreover, even if so combined, the two references still would not render Applicants' invention obvious, in view of the deficiencies of the Baumstark et al. reference, described above.

Accordingly, Applicants submit that all claims pending in the application are allowable. An early Notice of Allowance is respectfully requested.

Respectfully submitted,
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